

**STAAR Modified  
2013 Score Distributions  
and Statistics  
by Content Area  
and Grade**

# Glossary

This glossary provides definitions for the statistical terms that appear in the tables and graphs in this section (“STAAR Modified 2013 Score Distributions and Statistics by Content Area and Grade”) of Appendix C. Definition of statistical terms and concepts in the other sections are given in chapter 3 or chapter 5.

## Descriptive Statistics

**Mean.** The mean is a measure of central tendency. It is the average score for the assessment. It is computed by summing the scores of all students and dividing it by the total number of students (N).

**Median.** The median is another measure of central tendency. It is the score at the middle of the frequency distribution for the assessment. It is computed by finding the score at which there is the same number of scores above as there is below.

**Mode.** The mode is another measure of central tendency. It is the most frequently obtained score for the assessment. It is determined by computing the frequency distribution and finding the score point with the highest frequency (n-count).

**Range.** The range is a measure of statistical dispersion (variability or spread). It is the difference between the lowest and highest scores obtained by students on the assessment. It is computed by subtracting the lowest score from the highest score.

**Interquartile Range.** The interquartile range is another measure of statistical dispersion (variability or spread). It is the difference between the 1<sup>st</sup> and 3<sup>rd</sup> quartiles (or 25<sup>th</sup> and 75<sup>th</sup> percentile) of the score distribution for the assessment. It is computed by subtracting the score at the 1<sup>st</sup> quartile (the point that splits the lowest 25% of the scores) from the score at the 3<sup>rd</sup> quartile (the point that splits the highest 25% of the scores).

**Standard Deviation (SD).** The standard deviation is another measure of statistical dispersion (variability or spread). It is an indicator of the degree of score variation around the mean. It is computed using the following formula.

$$SD = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N - 1}}$$

where  $x_i$  is the score for student  $i$ ,  $\bar{x}$  is the mean score and  $N$  is the total number of students that took the assessment.

**Variance.** The variance is another measure of statistical dispersion (variability or spread) around the mean. It is computed as the square of the standard deviation (SD).

**Skewness.** The skewness is an indicator of the shape of the score distribution. It measures the extent to which the score distribution “leans” to one side of the mean. A positive skewness indicates that the score distribution leans below the mean. A negative skewness indicates that the score distribution leans above the mean. A skewness of zero indicates that the score distribution is symmetric around the mean. It is computed using the following formula.

$$\text{Skewness} = \frac{N}{(N-1)(N-2)} \sum_{i=1}^N \left( \frac{x_i - \bar{x}}{s_x} \right)^3$$

where  $x_i$  is the score for student  $i$ ,  $\bar{x}$  is the mean score,  $s_x$  is the standard deviation (SD) and  $N$  is the total number of students that took the assessment.

**Kurtosis.** The kurtosis is another indicator of the shape of the score distribution. It measures the “peakedness” of the score distribution. A positive kurtosis is referred to as *leptokurtic*, meaning that the distribution has a more acute peak around the mean and fatter tails. A negative kurtosis is called *platykurtic*, meaning the distribution has a lower, wider peak around the mean and thinner tails. It is computed using the following formula.

$$\text{Kurtosis} = \frac{N(N+1)}{(N-1)(N-2)(N-3)} \sum_{i=1}^N \left( \frac{x_i - \bar{x}}{s_x} \right)^4 - \frac{3(N-1)^2}{(N-2)(N-3)}$$

where  $x_i$  is the score for student  $i$ ,  $\bar{x}$  is the mean score,  $s_x$  is the standard deviation (SD) and  $N$  is the total number of students that took the assessment.

## Frequency Distributions<sup>1</sup>

**Frequency (FREQ).** This is the number of students that obtained the particular score point on the assessment.

**Cumulative Frequency (CUM FREQ).** This is the number of students that obtained a score that is less than or equal to the particular score point on the assessment.

**Percentage (PCT).** This is the percentage of students that obtained the particular score point on the assessment. It is computed as:  $\text{PCT} = \text{FREQ} \div N \times 100$ .

**Cumulative Percentage (CUM PCT).** This is the percentage of students that obtained a score that is less than or equal to the particular score point on the assessment. It is computed as:  $\text{CUM PCT} = \text{CUM FREQ} \div N \times 100$ .

---

<sup>1</sup> Frequency distributions and histograms for STAAR Modified assessments are combined across all test forms of the special operational administration.

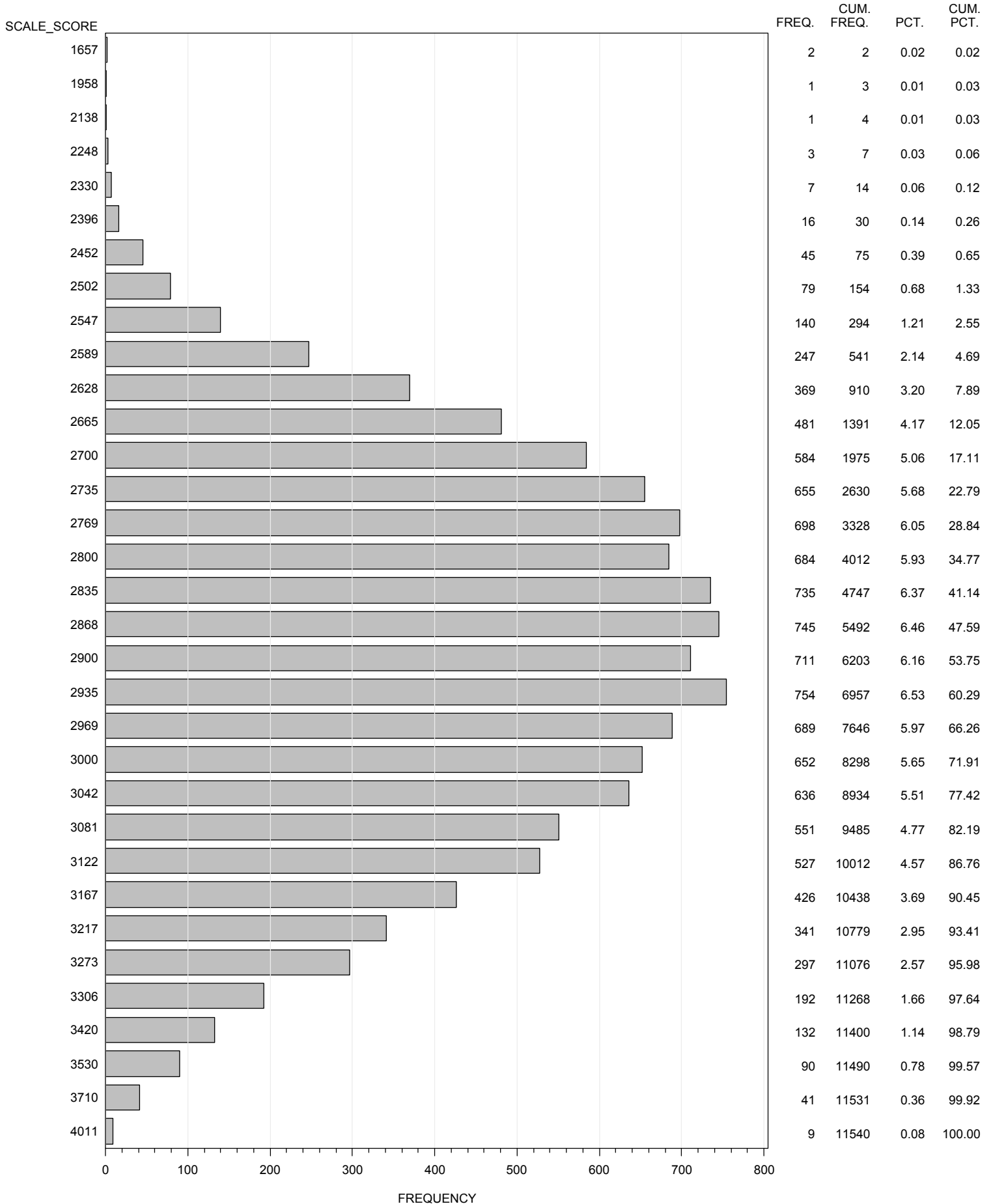
## Scale Score Descriptive Statistics for 2013 STAAR Modified 3–8 Assessments

Subject	N	Mean	Median	Mode	Interquartile					
					Range	Range	SD	Variance	Skewness	Kurtosis
GRADE 3 READING	11544	2913.79	2900	2935	2354	273	209.26	43788.29	0.5442	1.1550
GRADE 4 READING	14162	2902.90	2900	2924	2287	274	203.17	41279.04	0.3926	0.8276
GRADE 5 READING	15595	2946.28	2925	2862	2720	291	219.80	48310.03	0.5255	1.4890
GRADE 6 READING	15000	2897.10	2871	2839	2804	296	228.65	52278.89	0.2996	1.6138
GRADE 7 READING	13330	2903.53	2900	2900	2796	307	222.94	49703.64	0.3092	1.3673
GRADE 8 READING	12649	2918.55	2914	2914	2558	295	219.16	48032.66	0.2917	0.7819
GRADE 3 MATHEMATICS	9933	2936.54	2900	2723	3223	447	332.69	110681.72	0.5597	1.8048
GRADE 4 MATHEMATICS	12796	2927.18	2900	2800	3039	387	297.33	88406.65	0.5848	1.1137
GRADE 5 MATHEMATICS	14767	2936.27	2900	2765	3938	431	333.70	111353.21	0.5309	1.7839
GRADE 6 MATHEMATICS	14622	2864.39	2827	2735	4529	414	320.01	102409.35	0.3897	3.1901
GRADE 7 MATHEMATICS	13832	2889.77	2852	2760	4660	412	311.14	96805.71	0.4142	2.6407
GRADE 8 MATHEMATICS	13271	2873.22	2825	2739	4091	388	311.29	96903.81	0.3373	2.0879
GRADE 5 SCIENCE	12611	2846.31	2844	2921	2537	323	258.43	66783.85	0.6262	1.4796
GRADE 8 SCIENCE	11559	2933.71	2943	2979	3346	357	280.23	78529.94	0.2526	0.7294
GRADE 8 SOCIAL STUDIES	11214	2872.98	2836	2800	3026	284	222.55	49530.68	0.6763	2.2975
GRADE 4 WRITING	14070	2879.23	2850	2608	3507	449	338.48	114571.31	0.5198	0.9157
GRADE 7 WRITING	13461	2939.91	2900	2842	4157	384	309.89	96032.55	0.1238	1.4205

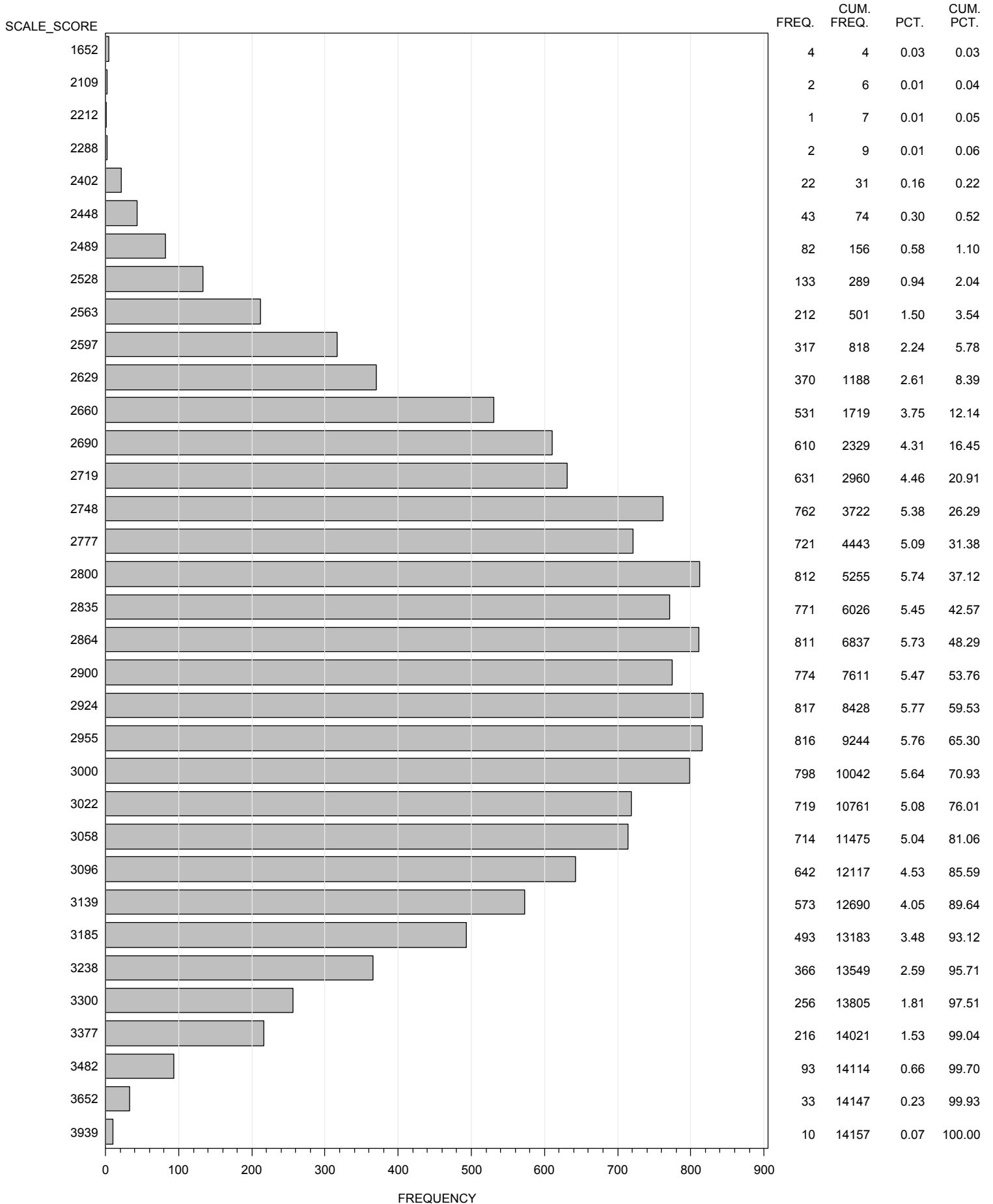
## Scale Score Descriptive Statistics for 2013 STAAR Modified EOC Assessments

Subject	N	Mean	Median	Mode	Range	Interquartile		SD	Variance	Skewness	Kurtosis
						Q1	Q3				
ENGLISH I - READING	12303	1482.21	1466	1450	1483	159	122.04	14893.27	-0.1187	2.5142	
ENGLISH I - WRITING	12246	1464.30	1457	1430	1206	154	118.85	14125.26	0.1872	1.8607	
ENGLISH II - READING	10940	1493.55	1479	1524	1444	183	133.54	17833.39	0.3314	0.8988	
ENGLISH II - WRITING	10958	1506.64	1500	1521	1478	177	122.29	14954.91	0.3125	1.1898	
ALGEBRA I	13133	2768.32	2765	2724	3313	260	225.13	50684.89	-0.1860	5.5938	
GEOMETRY	10284	2734.22	2739	2687	3596	321	240.34	57765.04	-0.0842	5.7357	
BIOLOGY	11206	2798.50	2800	2723	3048	272	224.47	50387.22	0.2144	3.4196	
WORLD GEOGRAPHY	10730	2882.51	2844	2763	3589	265	213.77	45697.86	0.6263	3.9012	

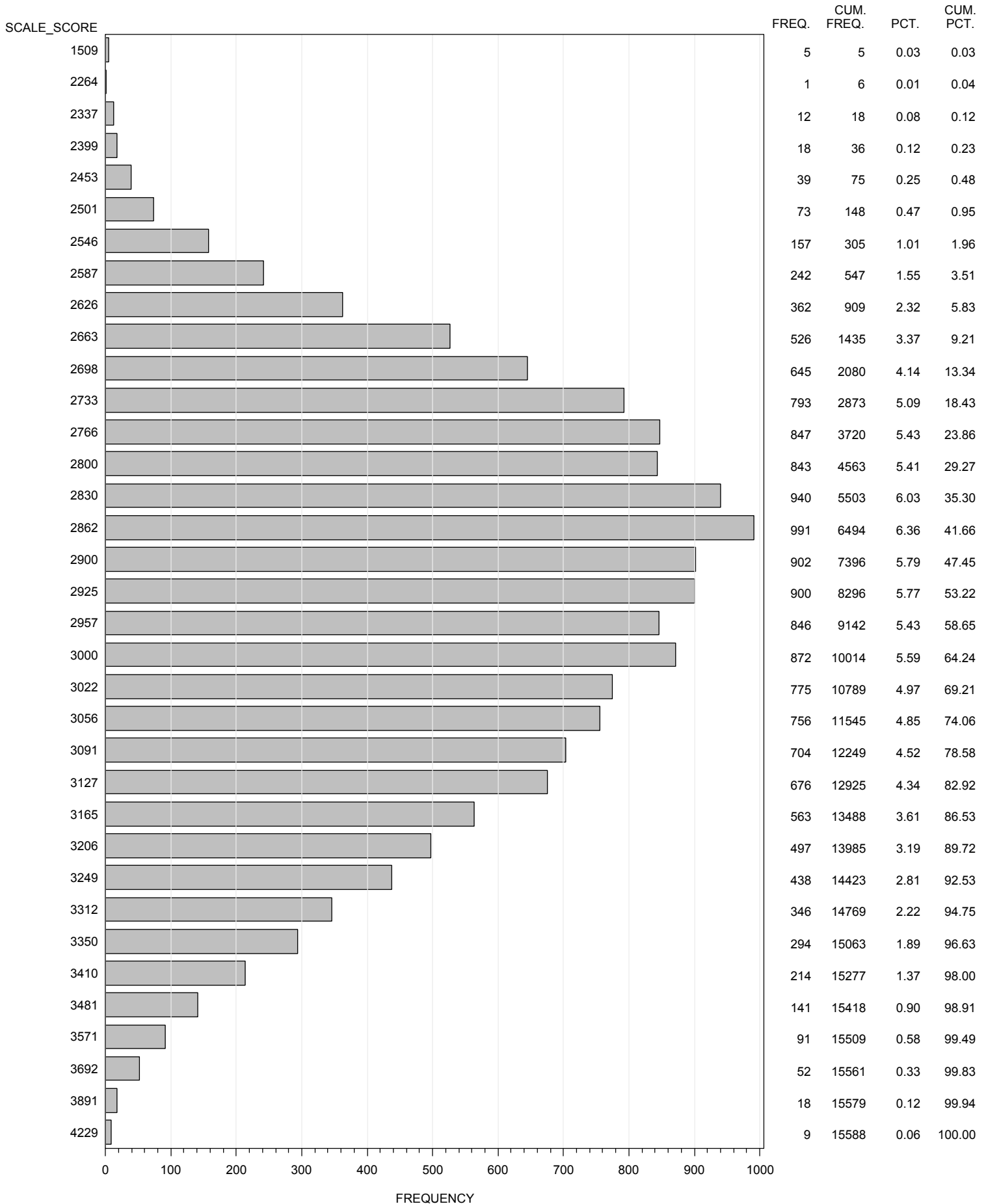
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 3 READING  
 ALL STUDENTS - EXCLUDING BRAILLE



FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 4 READING  
 ALL STUDENTS - EXCLUDING BRAILLE

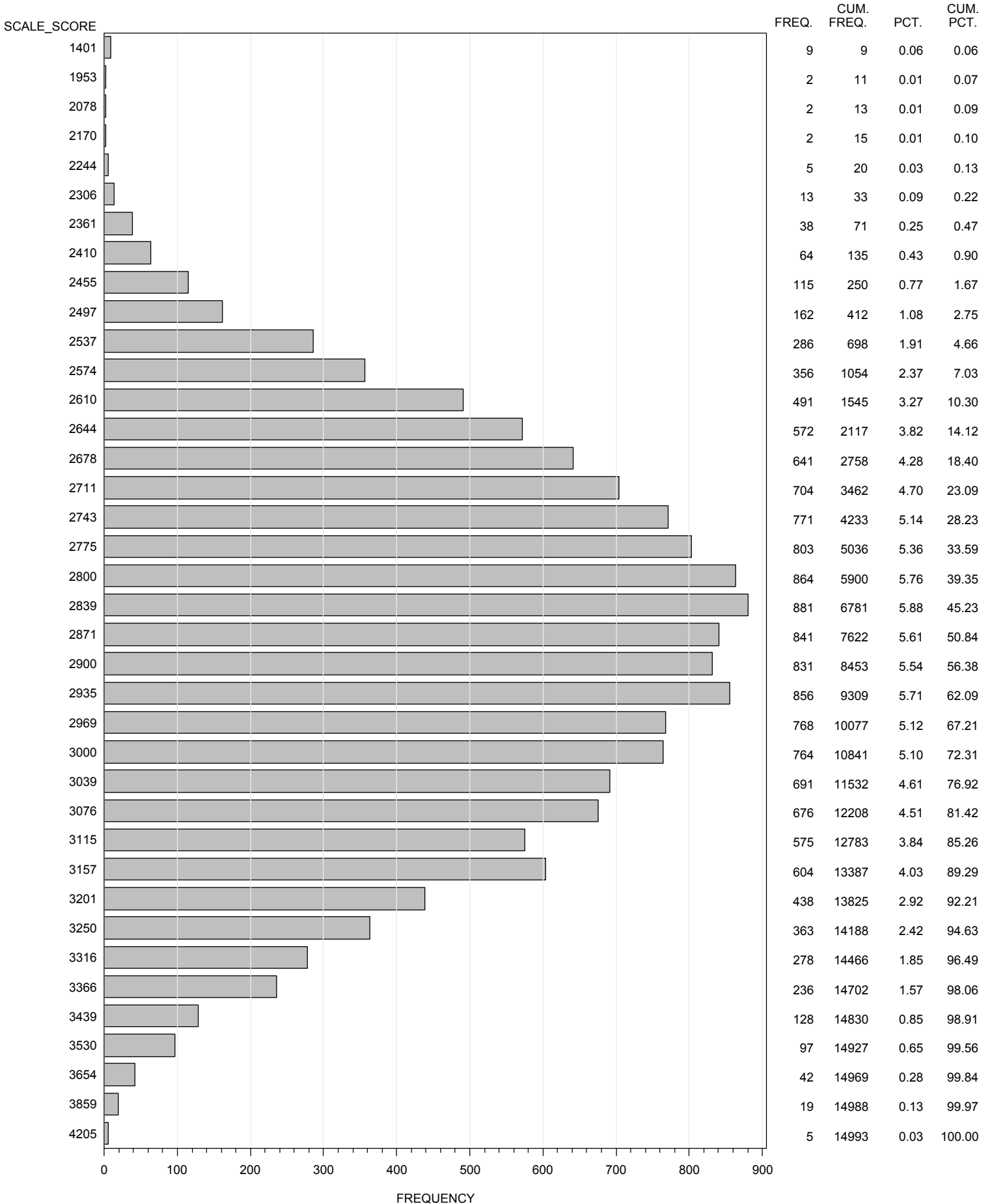


FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 5 READING  
 ALL STUDENTS - EXCLUDING BRAILLE

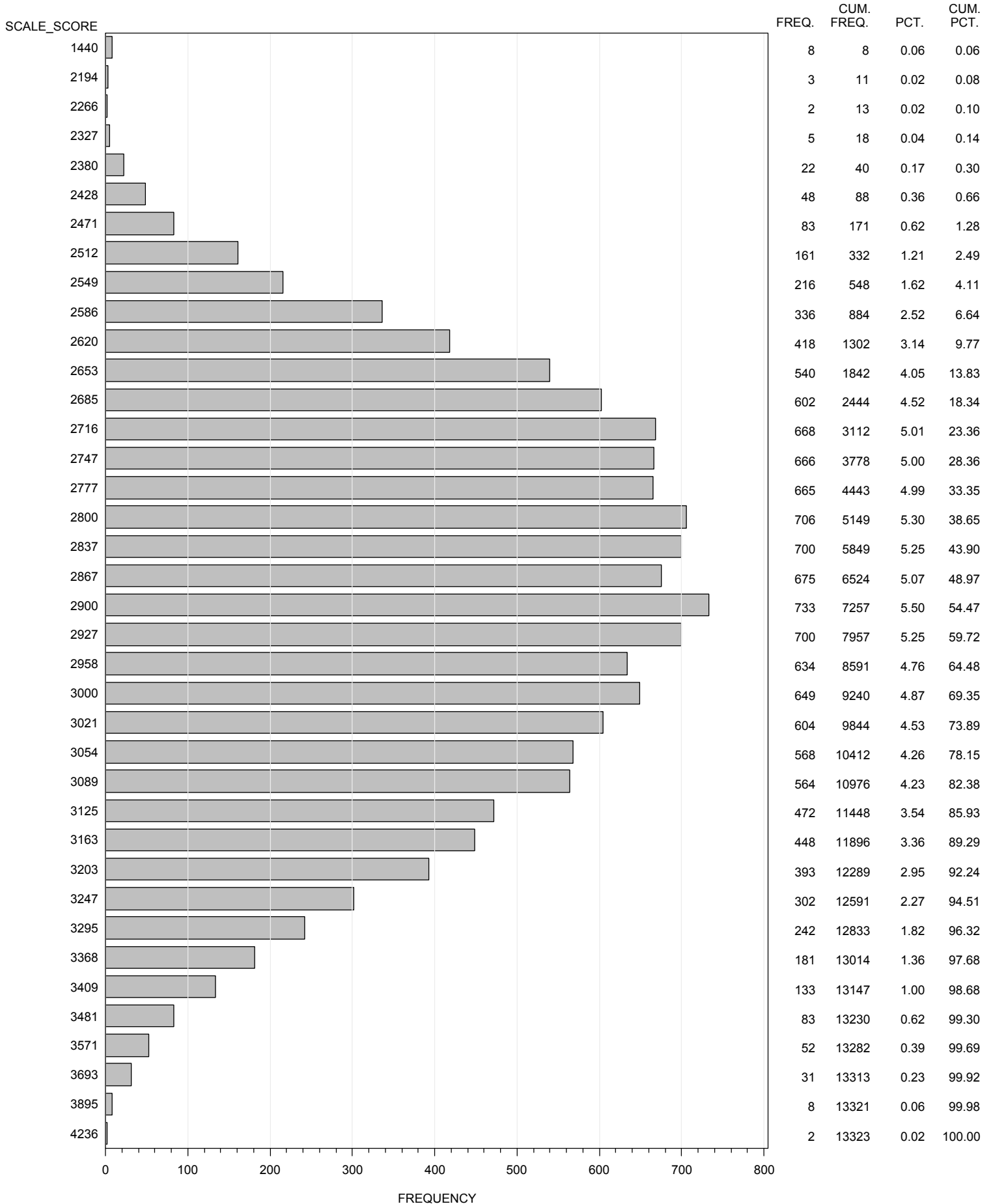




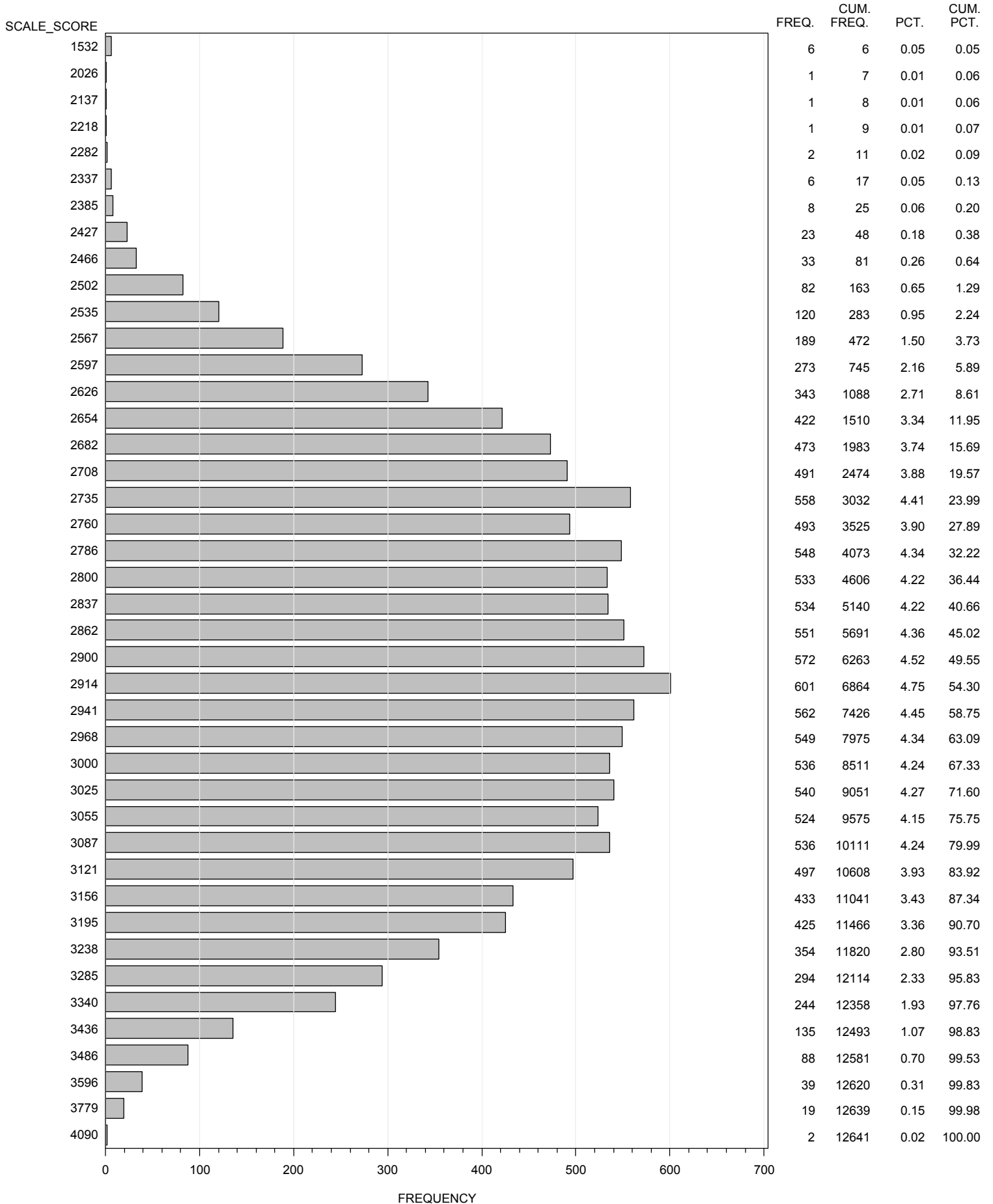
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 6 READING  
 ALL STUDENTS - EXCLUDING BRAILLE



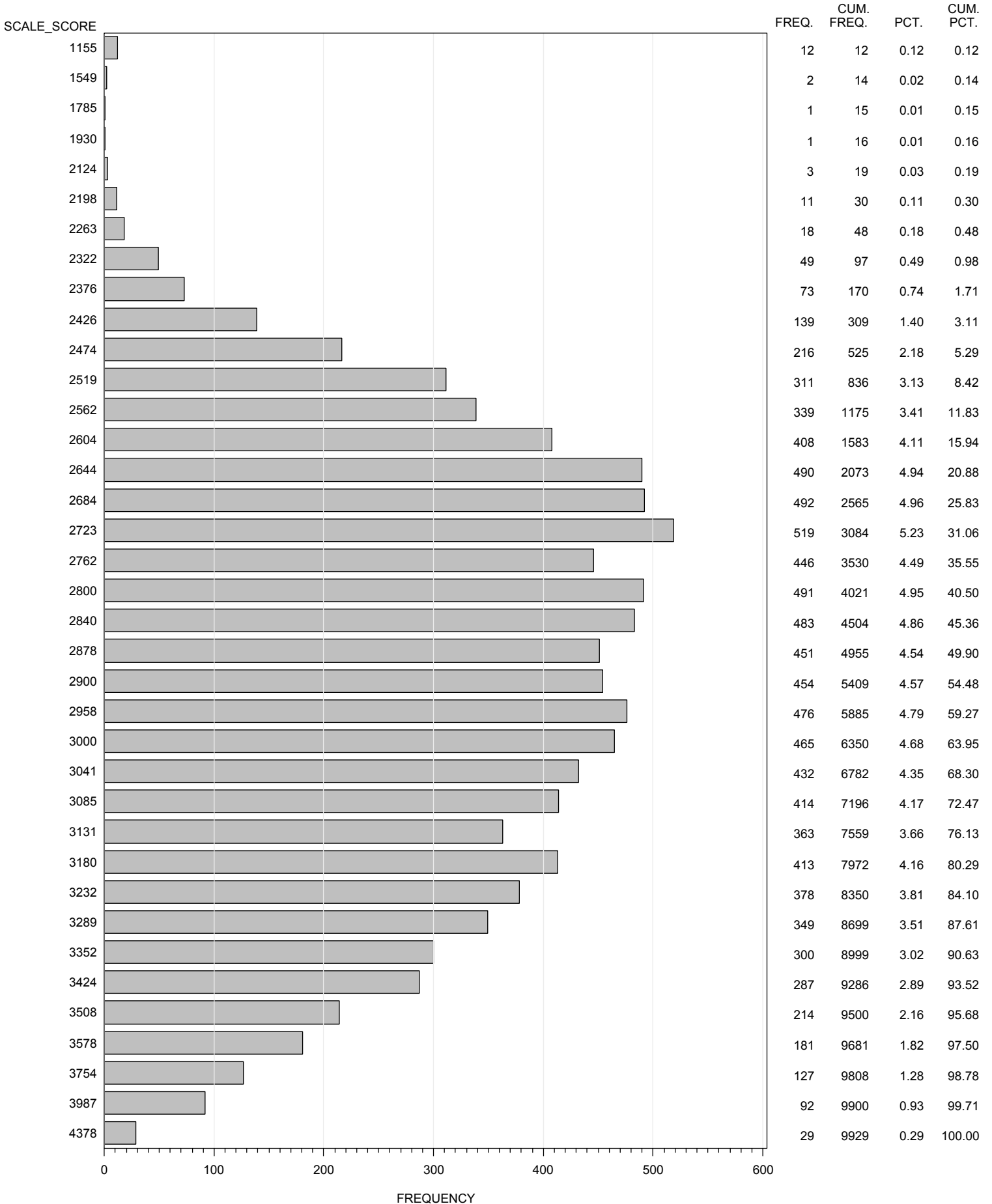
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 7 READING  
 ALL STUDENTS - EXCLUDING BRAILLE



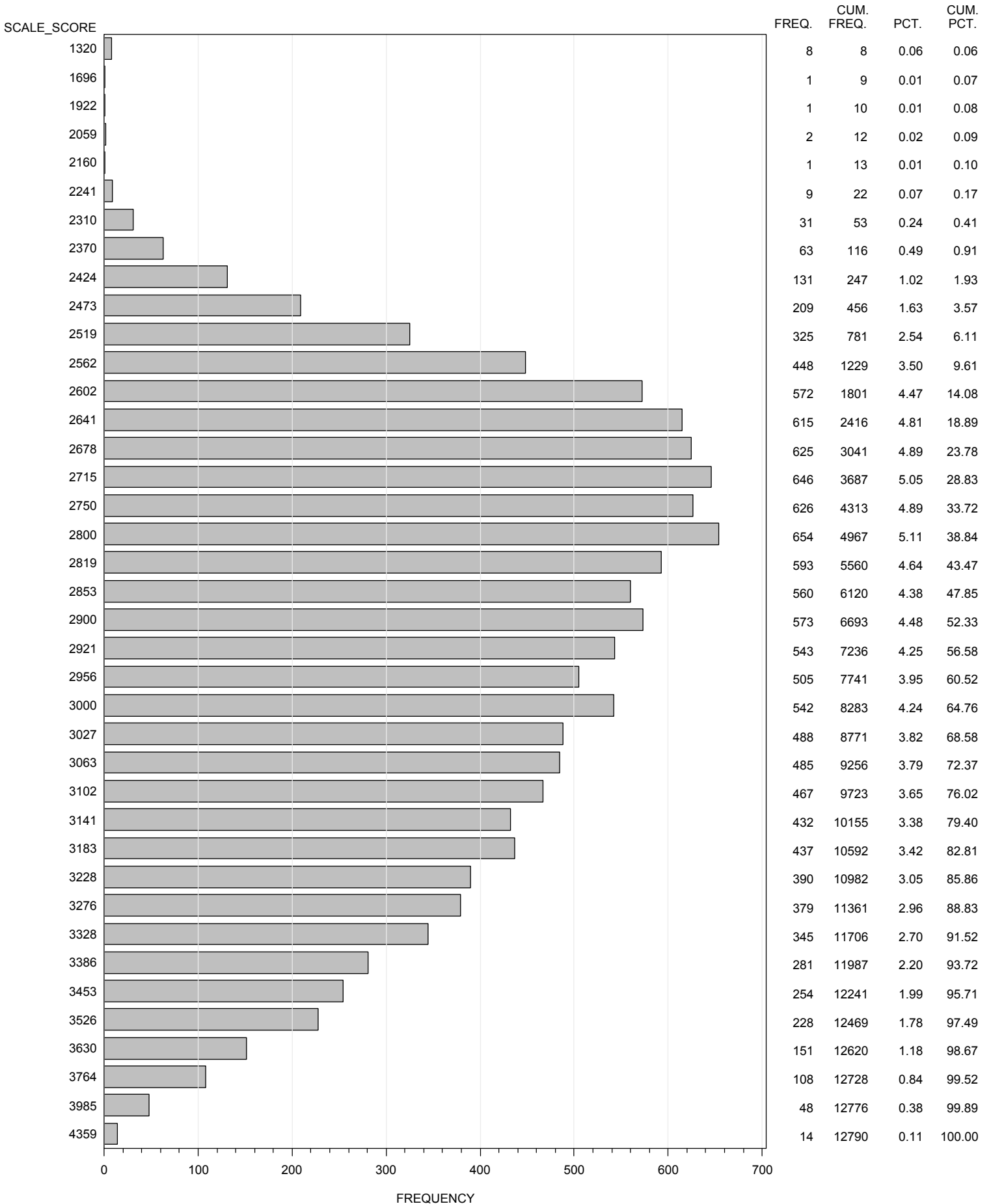
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 8 READING  
 ALL STUDENTS - EXCLUDING BRAILLE



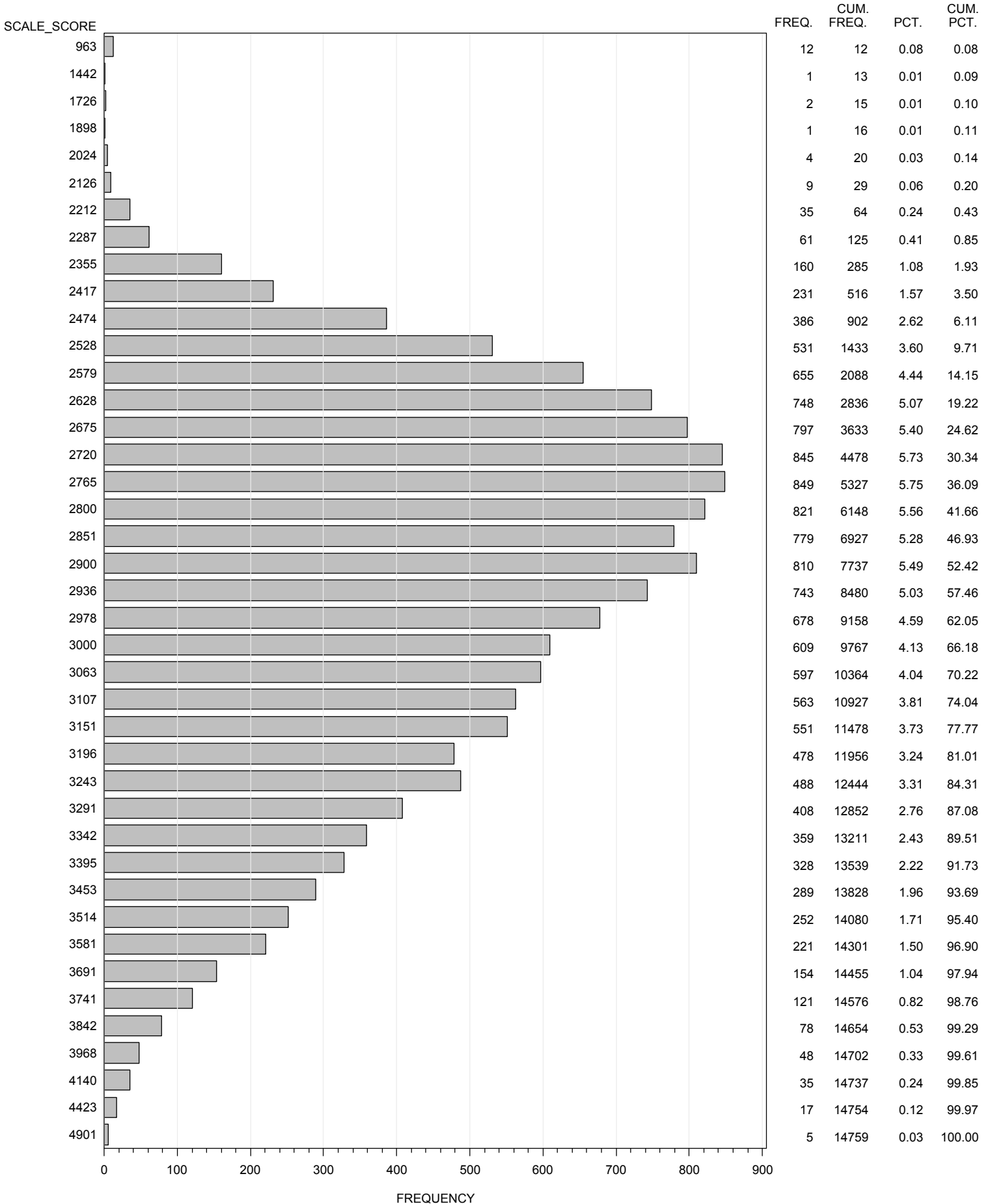
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 3 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE



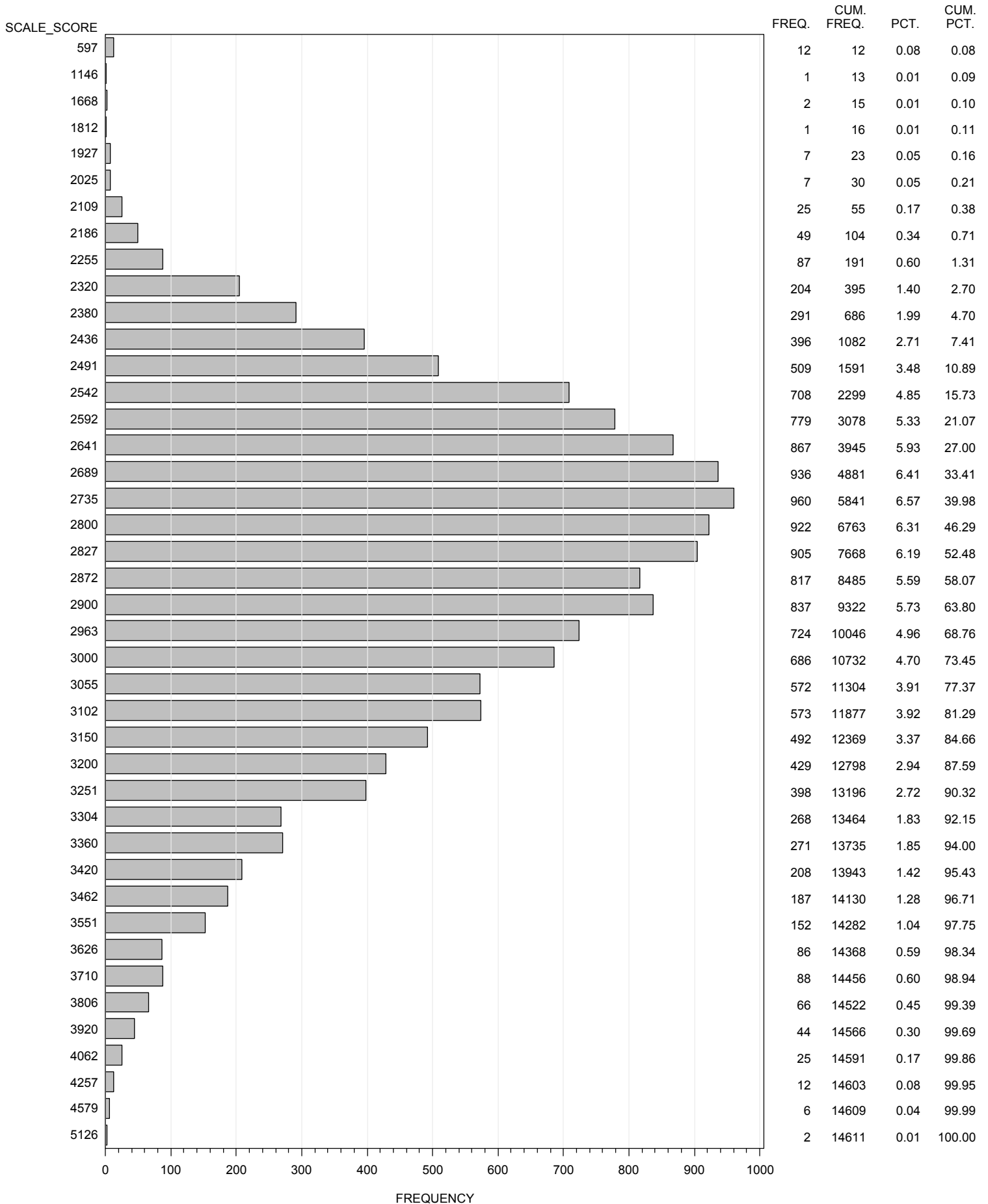
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 4 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE



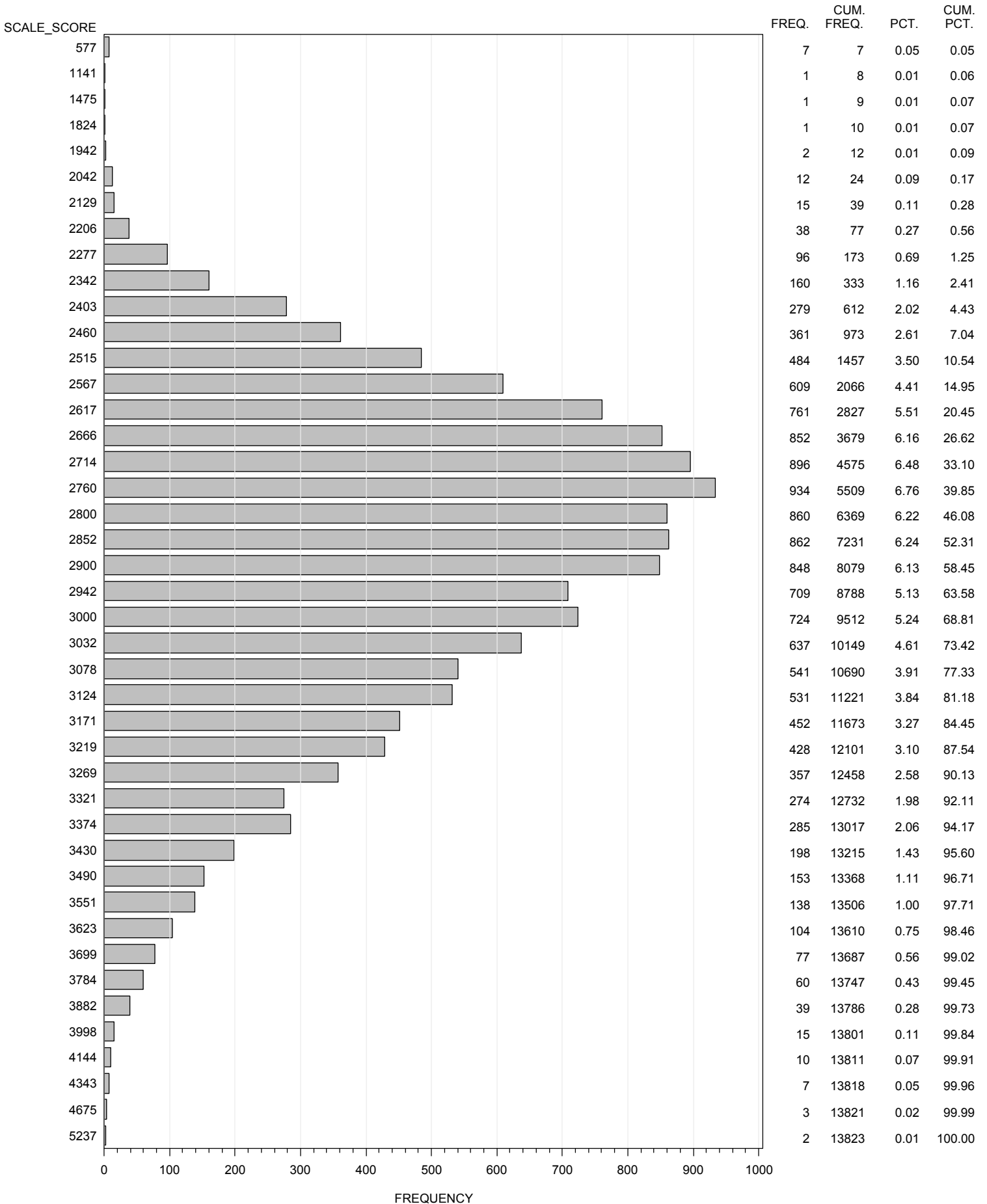
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 5 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE



FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 6 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE

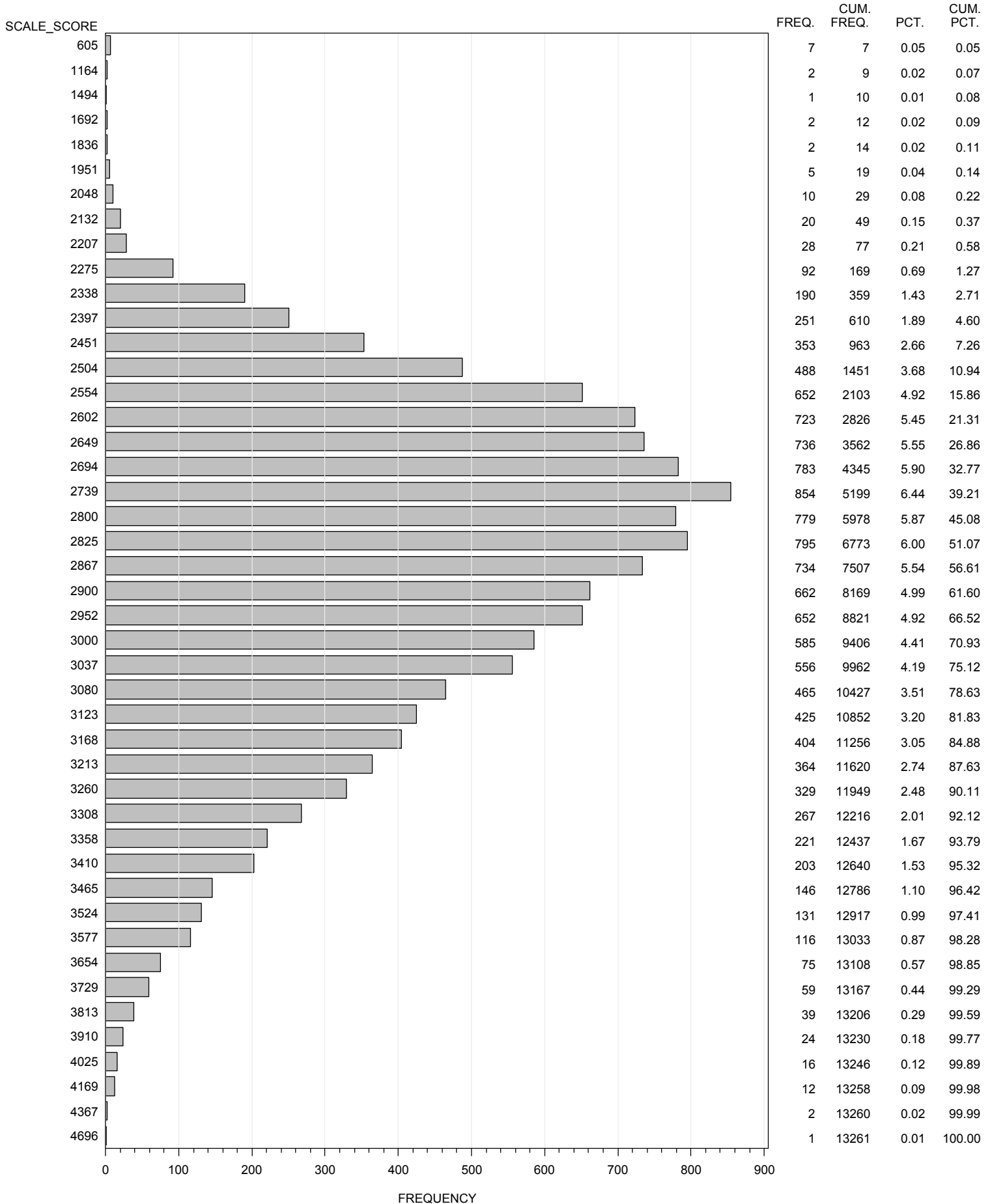


FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 7 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE

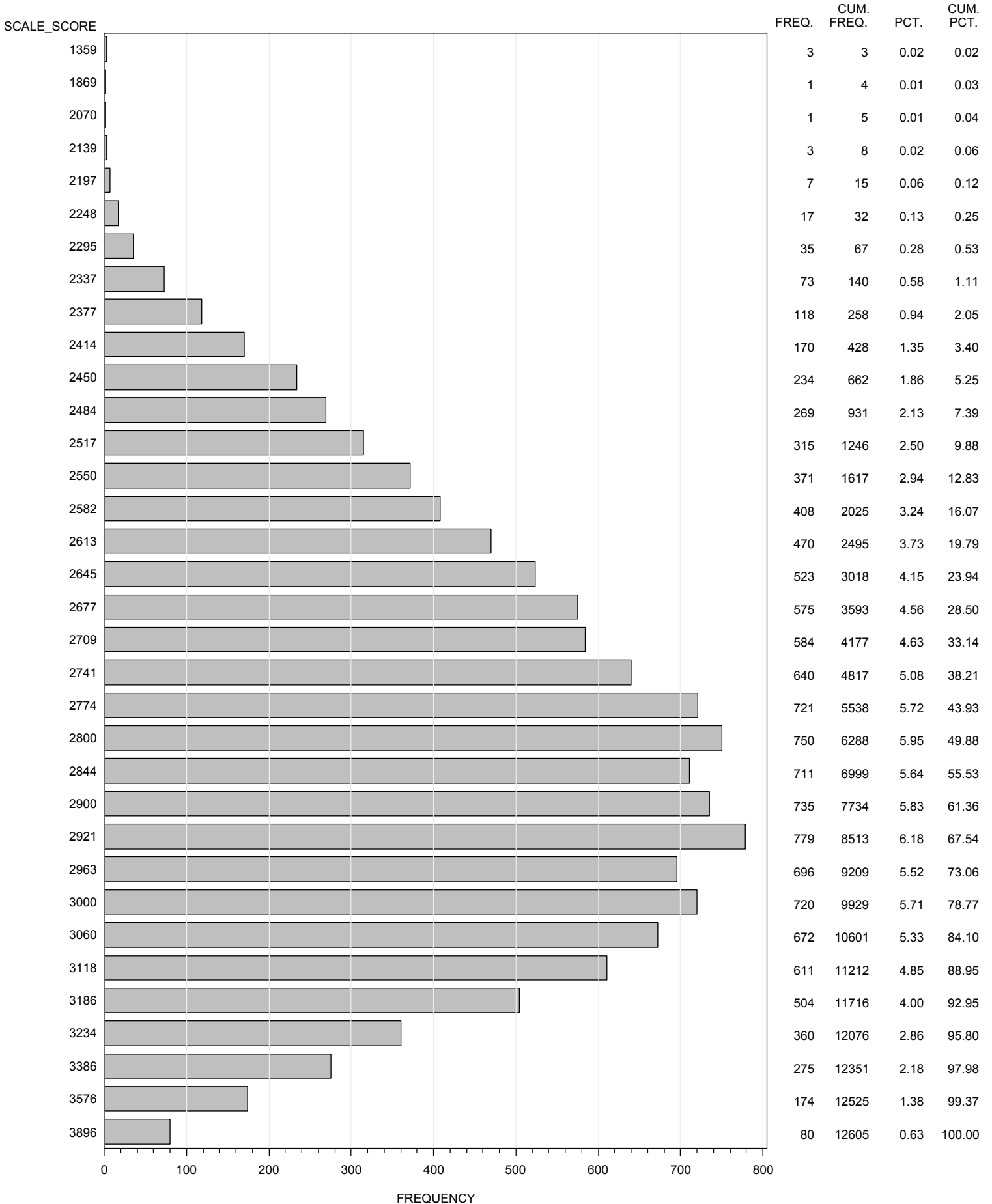




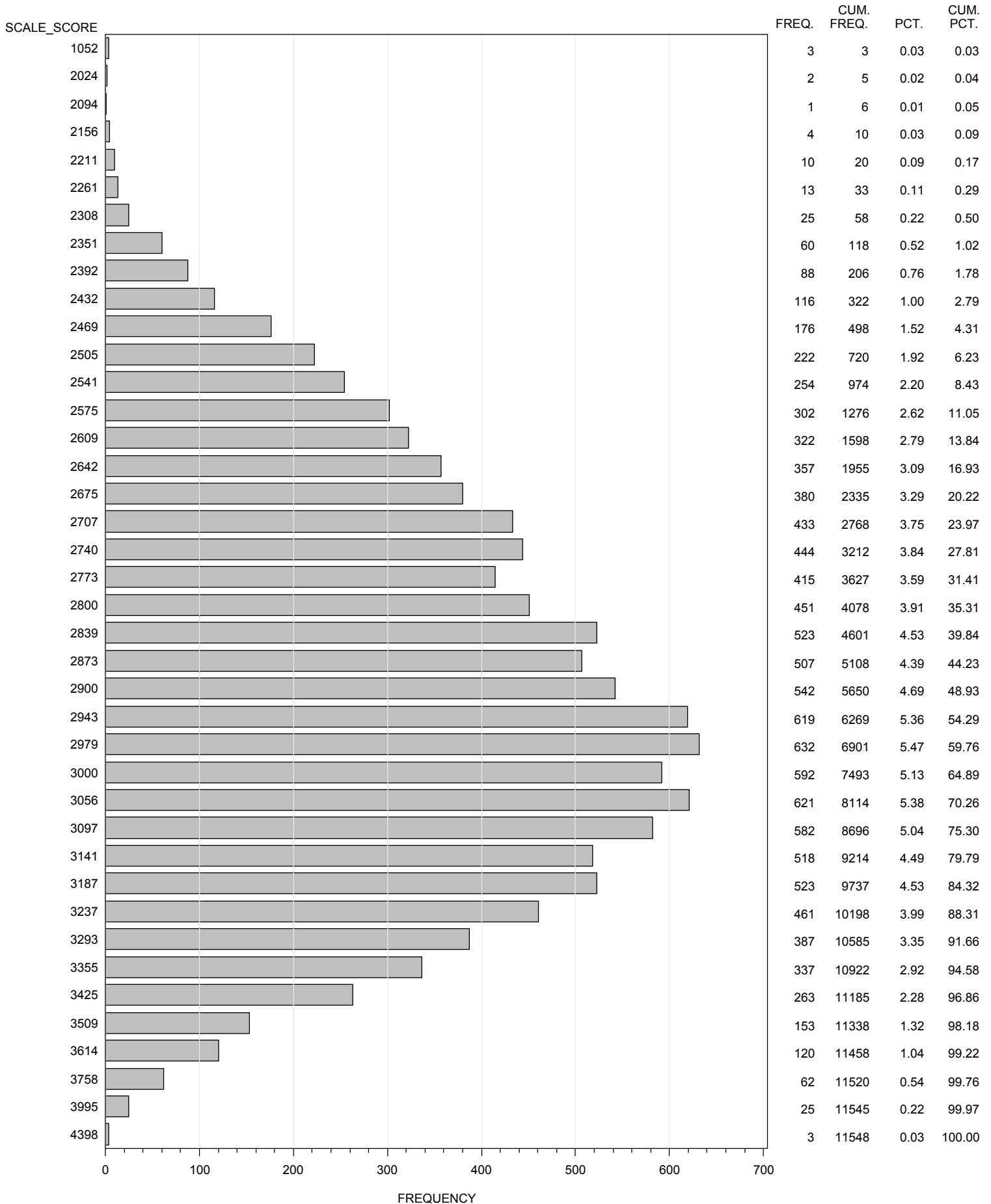
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 8 MATHEMATICS  
 ALL STUDENTS - EXCLUDING BRAILLE



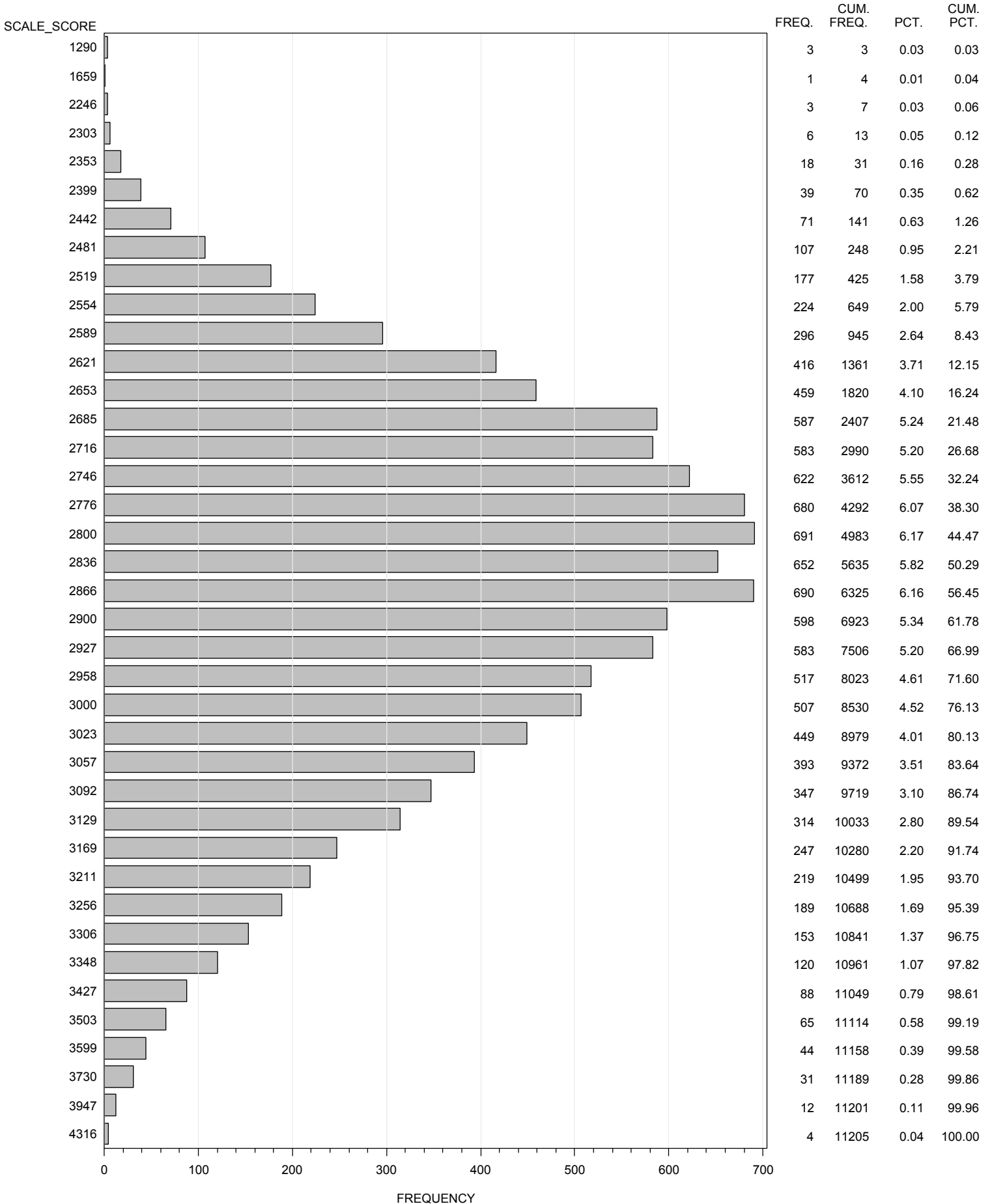
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 5 SCIENCE  
 ALL STUDENTS - EXCLUDING BRAILLE



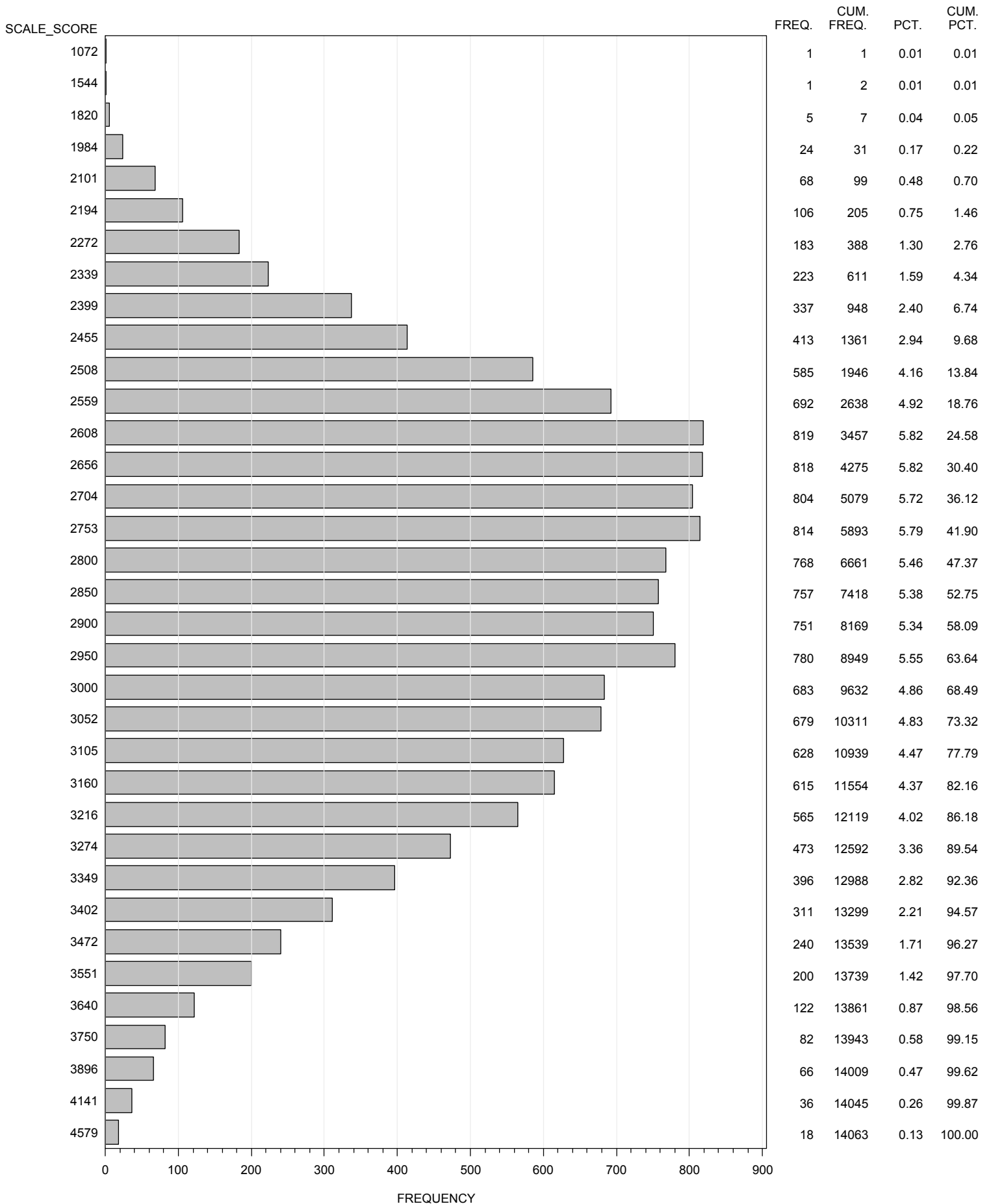
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 8 SCIENCE  
 ALL STUDENTS - EXCLUDING BRAILLE



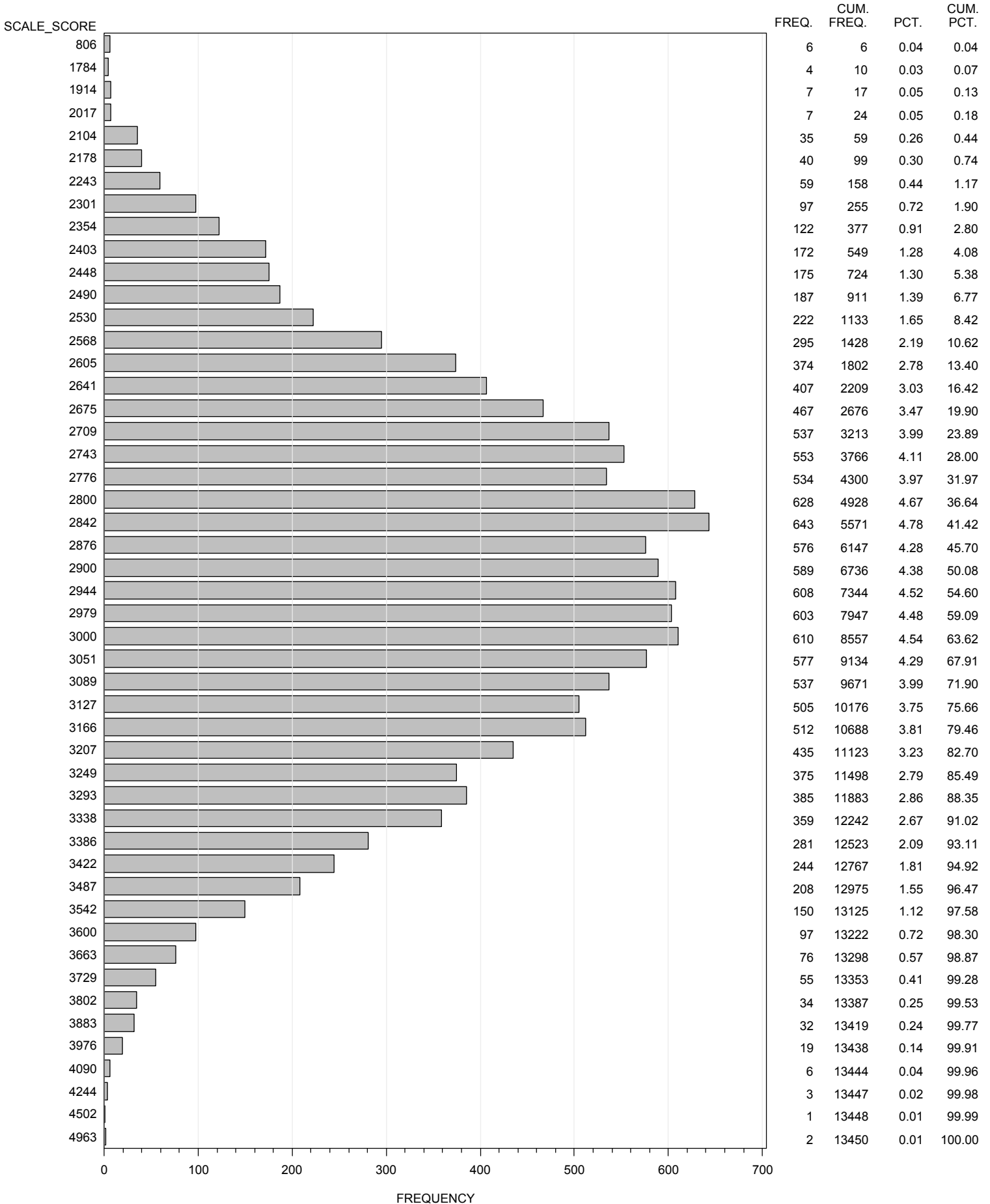
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 8 SOCIAL STUDIES  
 ALL STUDENTS - EXCLUDING BRAILLE



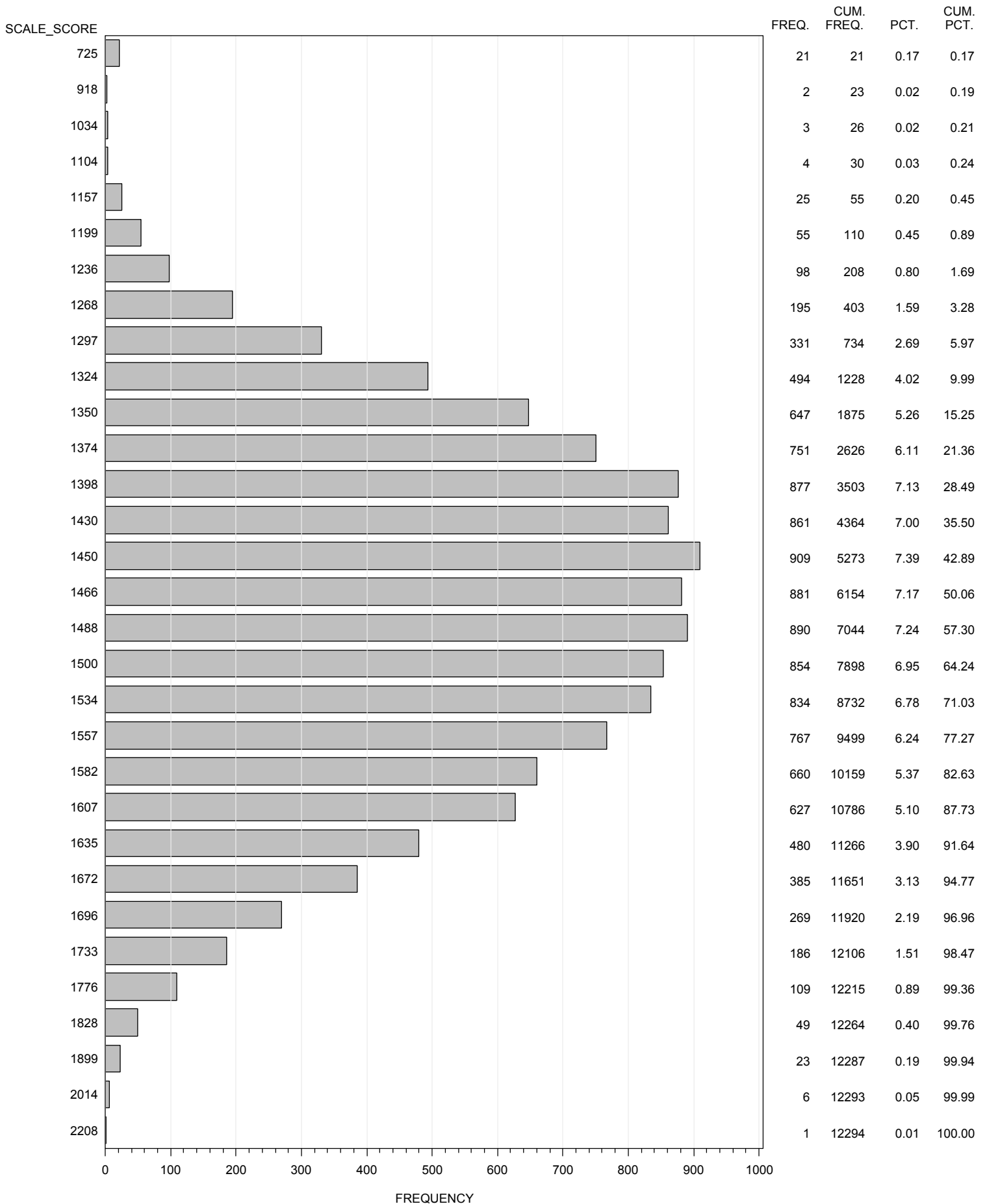
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 4 WRITING  
 ALL STUDENTS - EXCLUDING BRAILLE



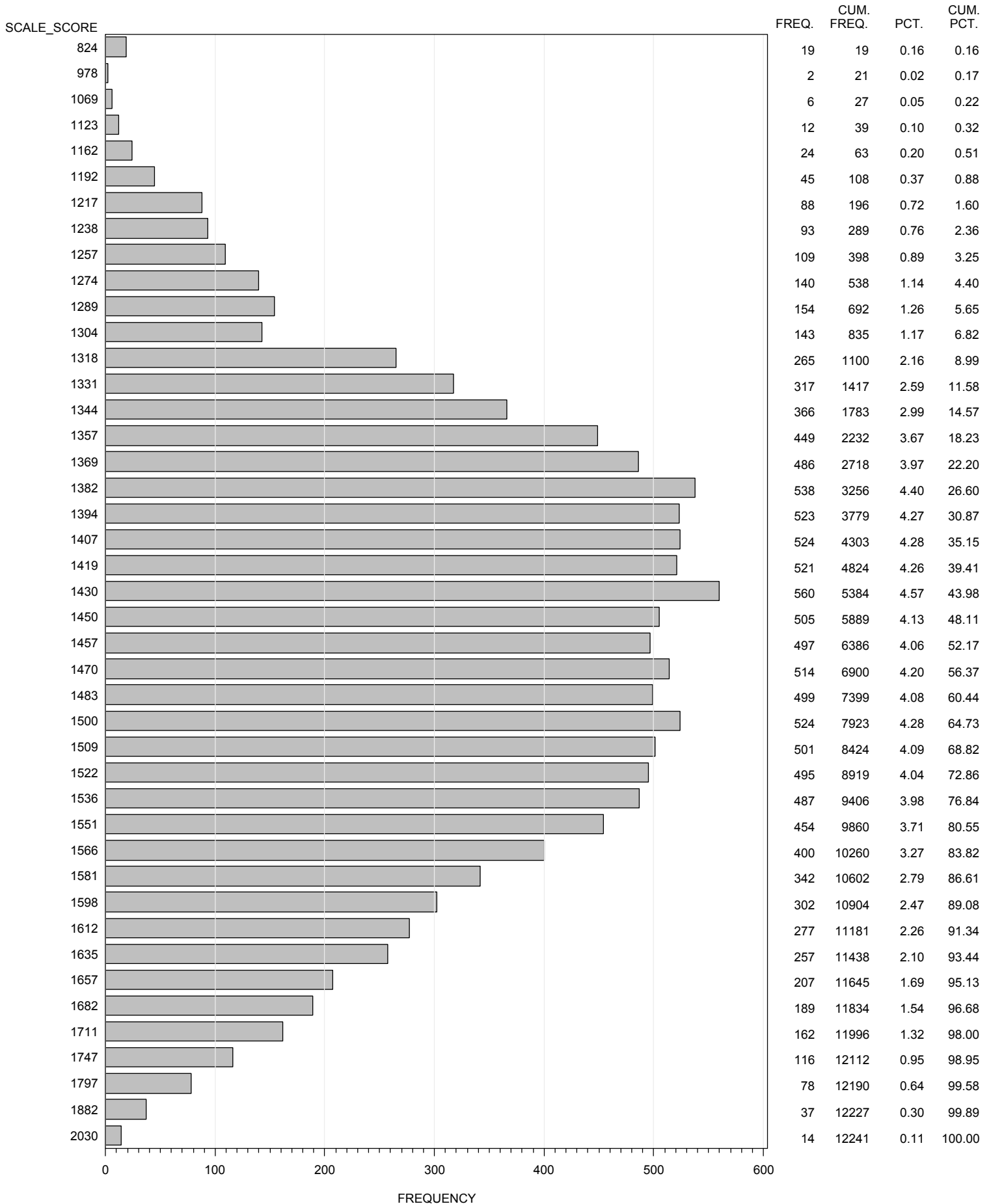
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED SPRING 2013  
 GRADE 7 WRITING  
 ALL STUDENTS - EXCLUDING BRAILLE



FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 ENGLISH I - READING  
 ALL STUDENTS

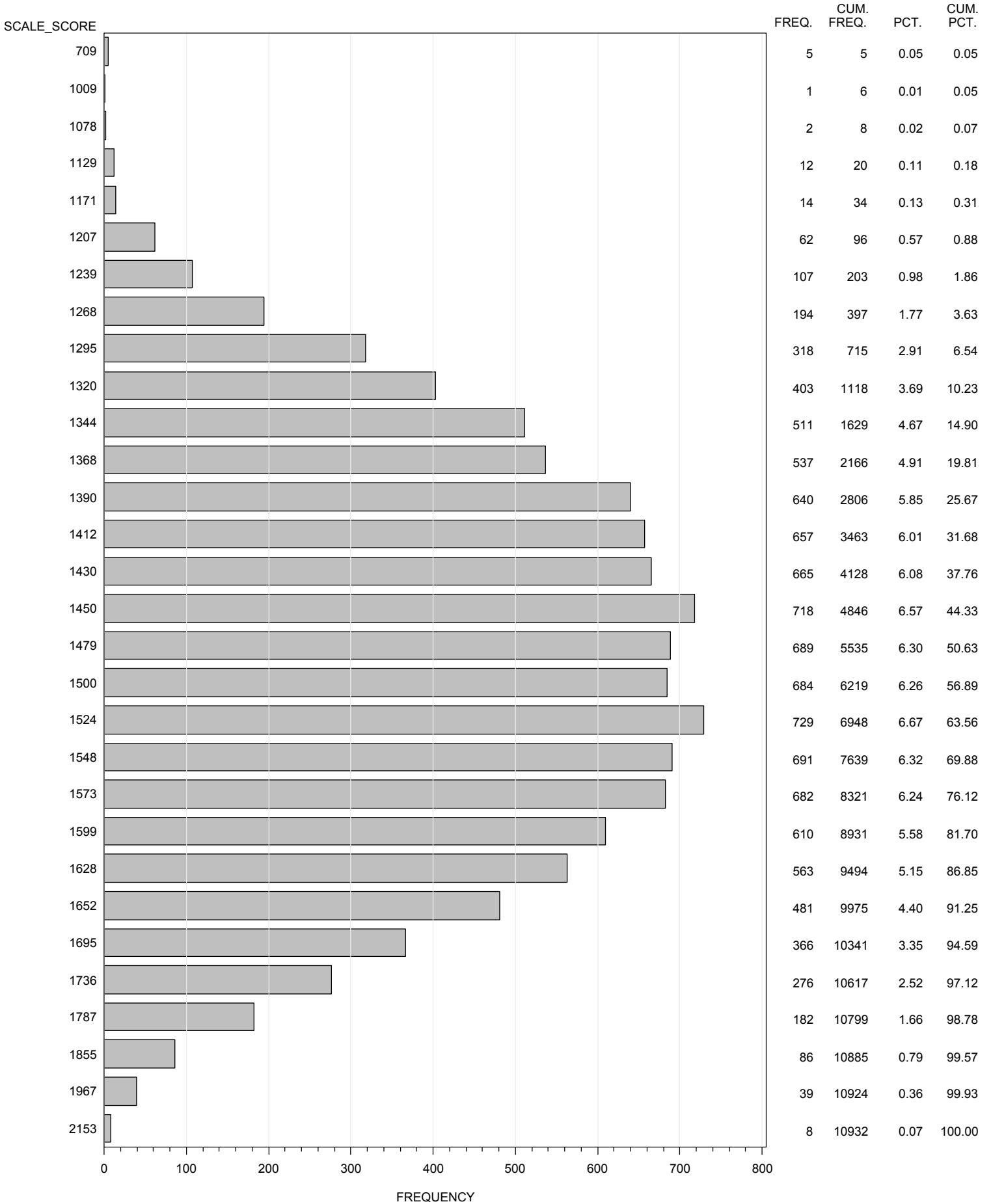


FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 ENGLISH I - WRITING  
 ALL STUDENTS

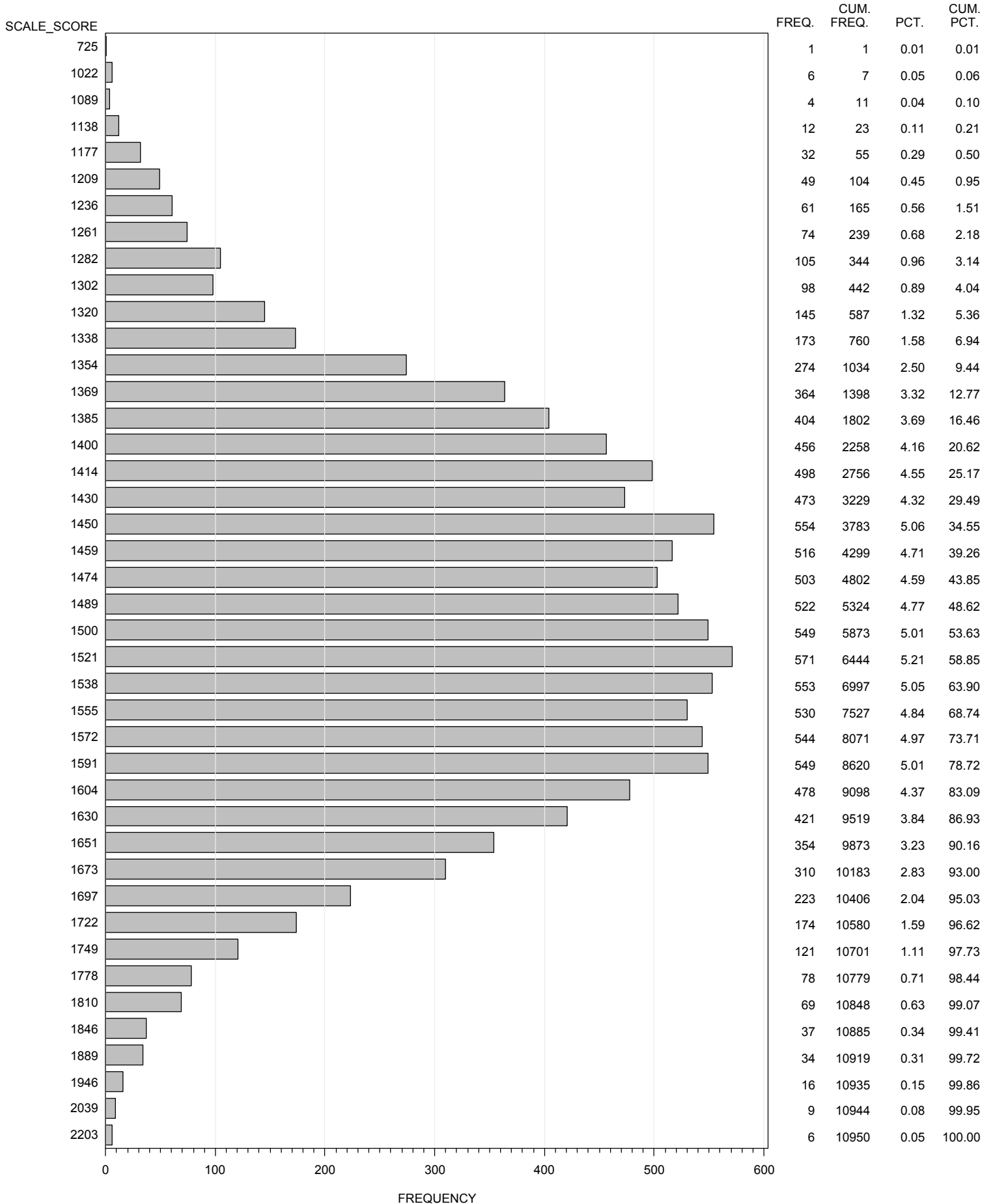




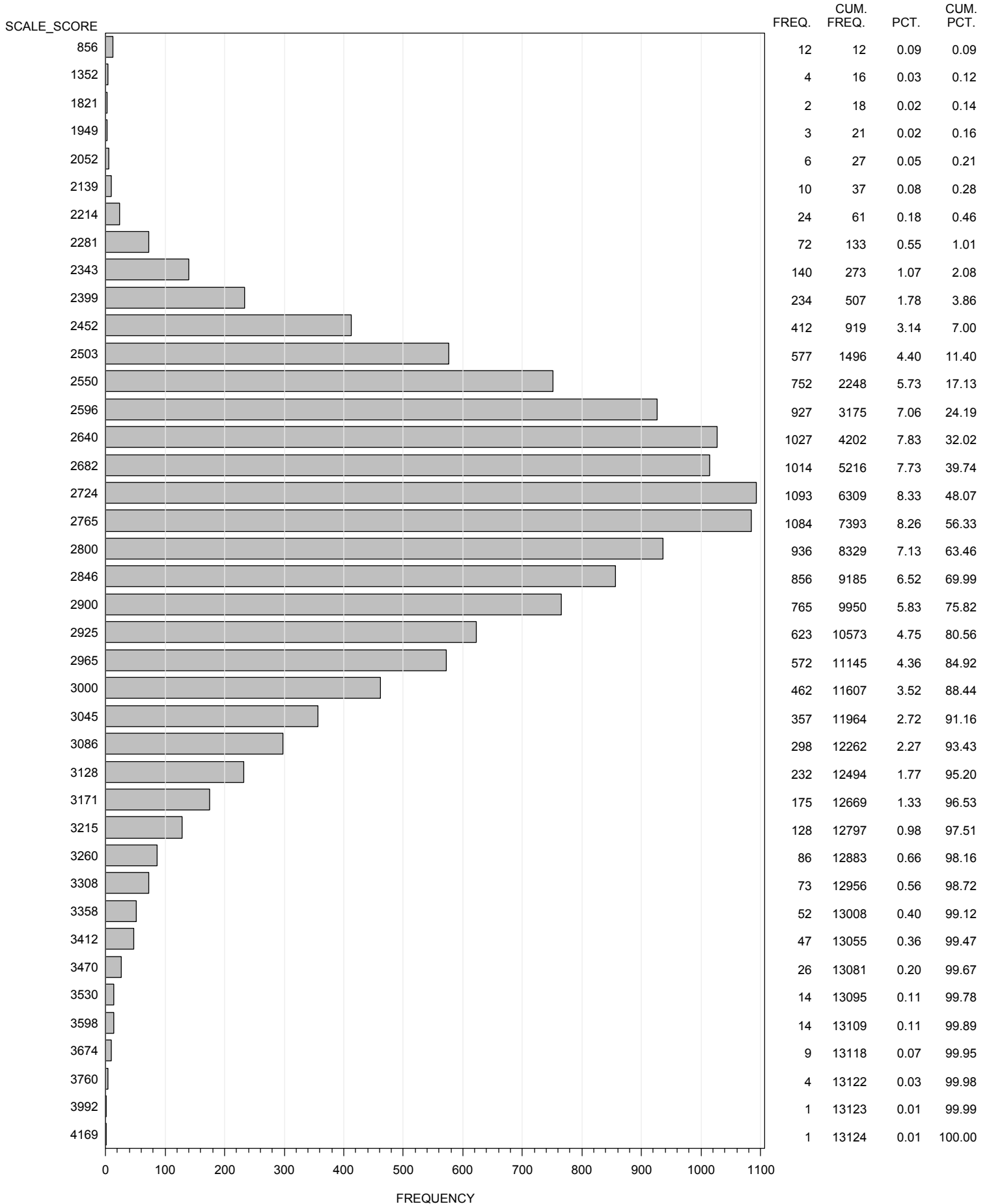
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 ENGLISH II - READING  
 ALL STUDENTS



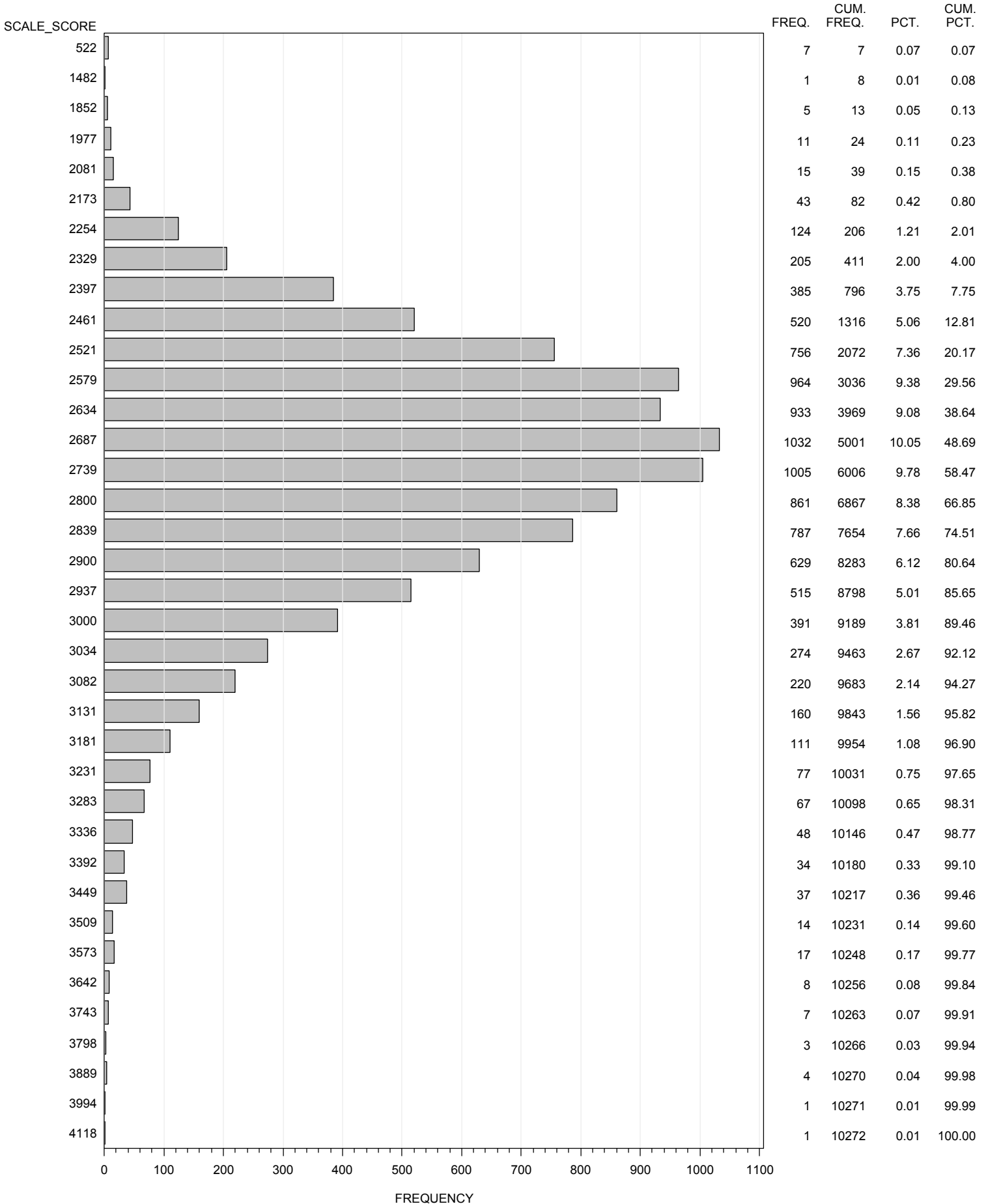
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 ENGLISH II - WRITING  
 ALL STUDENTS



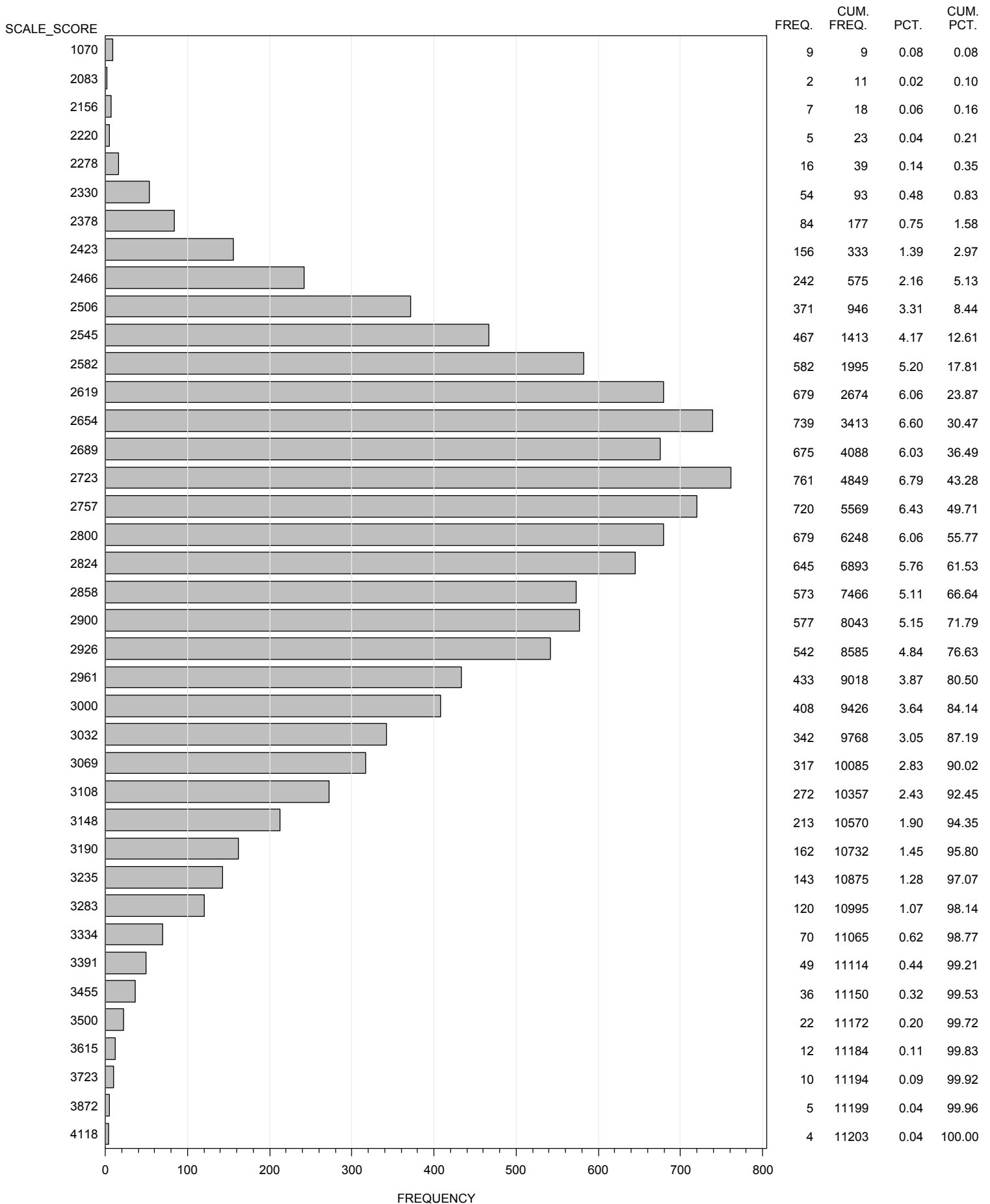
FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 ALGEBRA I  
 ALL STUDENTS



FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 GEOMETRY  
 ALL STUDENTS



FREQUENCY DISTRIBUTION - SCALE SCORES  
STAAR MODIFIED EOC SPRING 2013  
BIOLOGY  
ALL STUDENTS



FREQUENCY DISTRIBUTION - SCALE SCORES  
 STAAR MODIFIED EOC SPRING 2013  
 WORLD GEOGRAPHY  
 ALL STUDENTS

